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REPORT NO.

287

4 MAY 1956

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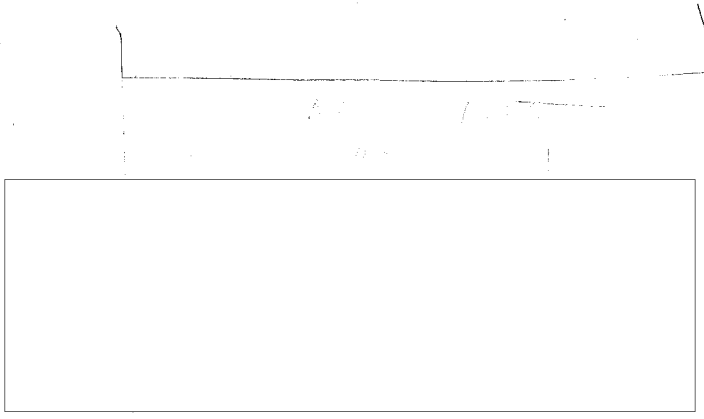

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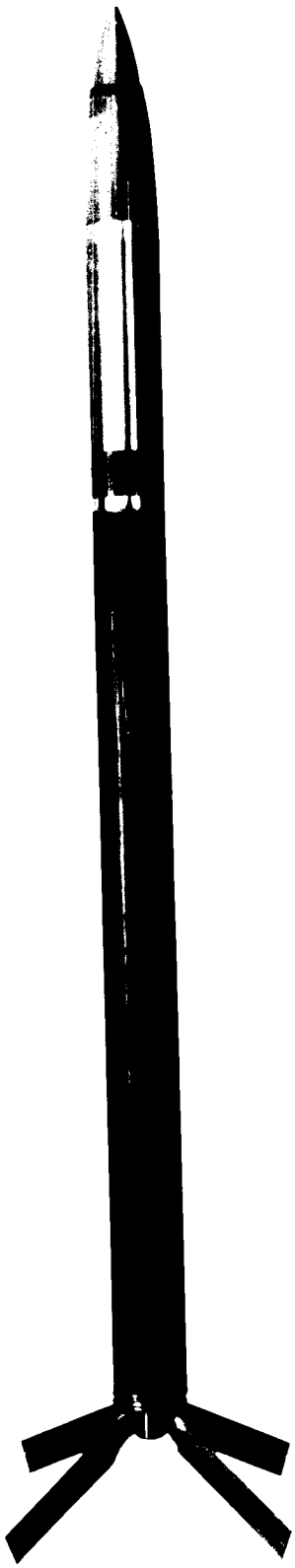

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I. INTRODUCTION

This report presents to the Metal Products Research Associates the results of an investigation and study for the development of weapons or technical devices which, by the use of decoy mechanisms, literature, and other material, purport to serve an apparent military requirement and whose existence is inadvertently released to an unfriendly power through capture or breaches of military security, the purpose of this being the distraction, dissipation and utilization of the efforts of the technical, engineering, scientific and research personnel of that nation in the investigation and study of these "decoy" devices.

After an initial analysis of various devices and equipment which could serve this purpose, the efforts of the contractor were directed to consideration of a guided missile unit which could be integrated into the present overall weapons system and provide a false trail with respect to tactical capabilities as well as technical advancement.

Presented herein are the general results of the investigation and the furnishing of a purported technical proposal to the Air Research and Development Command which is typical of the material necessary to introduce a new weapon into the Air Force system.

II. DISCUSSION

In Report No. 212, dated 8 March 1955, this contractor proposed to Metal Products Research Associates, the initiation of a project for the purpose of distracting and dissipating the technical and scientific efforts of unfriendly powers. This was to be accomplished by the careful build-up and supposedly inadvertent release of data and information on weapons and components which would apparently have extensive military use or which were supposedly part of a present weapons system and would indicate capabilities of that system far different than actually exists. This procedure would have the additional effect of requiring the unfriendly nation obtaining this information to reconsider its weapon counter-measure and tactics against such devices with the resultant expenditure of tremendous technical effort.

The basis for consideration of this program was the logical expectation that military and civilian intelligence organizations of all nations carefully and completely analyze every obtainable item of military equipment produced by their potential enemies as well as their present friends. The expected results of such studies are the acquisition of knowledge of the weapons and devices which may be employed against the nation and the establishment of counter measures and tactical procedures to reduce their effectiveness. Such information would then be used by that nation for establishing a standard or basis of operation by which performance of their own weapons could be judged, as well as the revealing of basic scientific fields in which their own development would be lacking or non-existent.

Because of these reasons it is definitely desirable that national groups expend a

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considerable portion of their funds and man power for such analytical and technical intelligence work. In particular, this is true of nations whose scientific and industrial status is undergoing an accelerated program to achieve domination.

Many instances of phenomenal increases in quality of weapons and material have been gained due to information from such studies. It thus appeared to the contractor that it would be economical to spend a reasonable amount of time in the preparation of a decoy program intended to create a condition of confusion and uncertainty in the minds of the military planners of unfriendly countries with the possibility of an actual change in tactics and operational procedures. This would, in effect, aid our own people by the disclosure of the opposition's specific weapons which have been protected under an excellent security program and heretofore remained undetected.

In initiating this program, first thought was given to the utilization of equipment and material which had been declared surplus or beyond the security stages; this equipment to have had sufficient modifications to create the impression that a new basic field of science was being utilized in their performance.

It was believed at that time that a typical device which could prove usable would be certain high altitude cameras which had been developed for a particular scientific purpose with the view towards impressing the opposed forces with the fact that air observation of their facilities and military installations had been made. This procedure, while probably useful, was negated by the fact that considerable publicity was coincidently aroused shortly afterwards by the use of high altitude propaganda or weather balloons and the further utilization of the decoy camera equipment would serve no useful purpose beyond aggravating an already tense situation.

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A second path which was considered lay in the possibility of utilizing certain simulated fire control and search equipment which could be "lost in flight". In view of the great number of possible programs which could be conducted in this one field, guidance was requested with respect to the development of one particular item which could prove of interest as a decoy device. This guidance was furnished the contractor in the setting forth of a need for a guided missile which would fit into the present weapons system and appear to be an operational device of a highly classified nature and capable of air to air use, the missile fitting somewhere between the present unguided rocket system and the guided missile of the Falcon type. Because of the need to provide a unit which could be readily handled and whose inadvertent dissemination could be relatively easily accomplished, it was decided that a large missile such as the Matador aircraft or the Snark would be undesirable and would show only a limited developmental capability. On the other hand, it was extremely desirable to be able to utilize present equipment such as aircraft external carrier and launcher arrangements without modification.

First consideration for such a missile lay in the use of the five inch HVAR motor with simulated guided warhead. Further analysis of this device showed a similarity in concept to that of the Sidewinder and the Falcon and therefore a search was made for a different motor. This led to consideration of the 2.75 inch FFAR as the propulsion means with the thought that the technical and scientific capability of fitting a guidance system into this diameter rocket would create the revision of an unfriendly nation's combat flight procedures. Guidance and corroboration of this selection was then requested by the contractor and it was agreed that if a feasible approach could

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be shown using the 2. 75 inch rocket, that such a unit could possibly meet the requirements of the customer. Accordingly, an investigation was undertaken to determine the limits of aerodynamic stability of a longer rocket, the velocities and flight path which the longer and possibly heavier rocket would take, as well as the capabilities of such a device fitting into the launching equipment presently available for the 2. 75 inch FFAR.

The contractor was aided in this investigation by previous analyses which had been made to determine the maximum weight limitations allowable for the 2. 75 inch FFAR configuration. The results of these studies showed that the warhead portion of the rocket could be increased in length up to ten inches and increased in weight up to ten pounds. This would show enough of a deviation from the standard to indicate a new concept and design. In order to utilize existing production facilities and minimize the developmental procedures and fabrication necessary for furnishing such items, it was decided that only the warhead be modified and that the present rocket motor assembly be used in its entirety without modification. During this later study it was believed that the presentation of a fully guided missile within the 2. 75 inch diameter would represent a technical capability so far beyond the present components and launching systems that the exposure of such a device could easily be dismissed by the scientific personnel of the foreign nation as merely propaganda. On the other hand, by combining the operation of the decoy missile with that of the present 2. 75 inch weapon's mission there would be created a more logical weapon structure and offensive system leading up to the Hughes Falcon and other fully guided missiles in that category.

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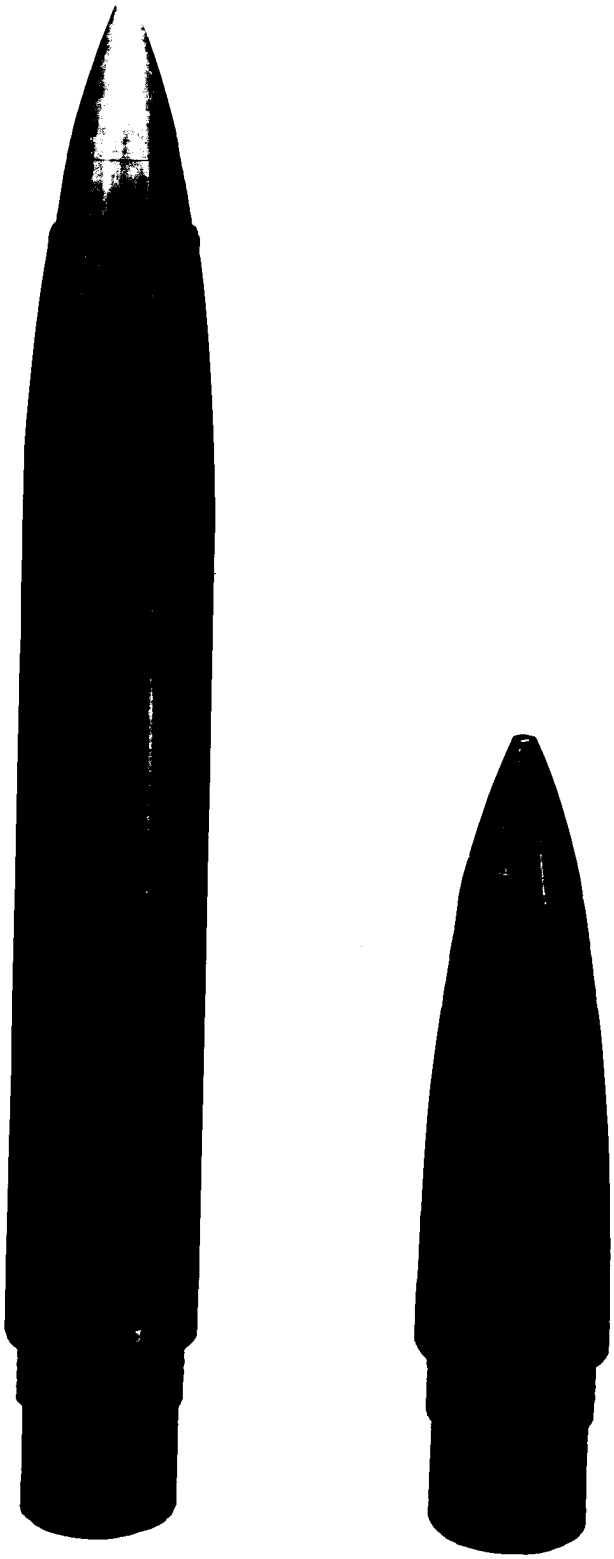
Accordingly, this contractor has prepared a technical proposal, Report 282, covering the development of a directed aircraft rocket with means for taking corrective action against a target undergoing evasive maneuvers. The concept is called DAREC and will be referred to as such in the remainder of this report. One dummy unit has been fabricated for demonstration purposes and is shown in photograph 76150 while the modified head assembly is shown in comparison to the standard FFAR head assembly in photograph 76149.

In accordance with earlier decisions on the subject, the plan followed for preparation of this mock-up as well as the technical proposal of Report 282 was the same as that for normal projects initiated by [redacted] 25X1 No reference to the actual research order for MPRA has been made outside the presentation of this report and the work was undertaken on the basis of a proposal initiated by [redacted] 25X1 as No. P376 with a separate file being originated and work commencing on the basis of Report 282.

The operational characteristics and its capabilities for fitting into the present 2.75 inch launcher systems is fully described in that report and need not be duplicated. While three designs have been shown in Report 282, the mock-up was based on Design "A", which is the particular design recommended by this contractor for utilization.



76149

III. PROCEDURE

The latter portion of the program, which commenced upon selection of the 2.75 inch FFAR as the basic vehicle, has been based on the introduction of this missile into the current Air Force family of guided missiles by the use of simulated "training" heads with maintenance manuals, technical orders, and other literature pertaining to the installation and firing of such devices in conjunction with the present 2.75 inch rockets. These "training" heads, or dummy warheads, would contain in the exterior shell only those components which would be considered non-critical and yet give an indication of the function and feasibility of the unit. In accordance with the requirements of the contract only this report, the mock-up and the technical proposal have been presented with the view towards obtaining approval in guidance from the customer with respect to further procedures.

Two possible procedures for widening the scope of this program appear feasible. The first is based on the introduction of experimental units which will be fabricated and then flight tested at the various available testing facilities such as Edwards Air Force Base, Inyokern and Eglin Field and the furnishing of preliminary operational manuals, reports and such printed material as is required of a contractor providing items of a prototype or pilot production nature. These could be followed up by the fabrication of large quantities of dummy or training units for dissemination to field elements engaged in rocket target practice with the idea in mind of thus providing a means for disseminating the information that such equipment is just entering the operational field. The alternate to this would be the fabrication of large quantities

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of these "training" heads as well as the printing of a large number of instructional manuals and operational manuals and the dissemination of this equipment directly to field users with the view towards providing information that such units are currently operational Because of the need for correct insertion of these missiles into the weapons system, it is believed by this contractor that the former operational procedure is the preferred one even though it may take slightly longer to indicate an operational capability. The chances for disclosure are much greater plus the fact that the weapon will enter the system in a normal R & D manner and thus have a background capable of being scrutinized without disclosing its limitations.

It is anticipated that work at this installation will consist of research, design, preparation of drawings, plus fabrication of prototypes. Upon completion of a limited number of prototypes, firing tests will be performed with perhaps the inadvertent "losing" of a unit or components, whichever appears desirable at the time. After completion of tests and satisfaction of the using service that the device is capable of scrutiny, a limited number will be produced for distribution for training purposes along with such handbooks and related material as is required.

In addition to the primary purpose of this program, which is the distraction and confusion of the enemy, the secondary advantage of "Leak Detection" may be obtained. Since the operation of the program will be under constant control, it would seem that after initial revelation of the general nature of the weapon, that any persistent efforts to seek specific knowledge of the weapon details while they are still highly classified would merit suspicion.

IV. CONCLUSION

The "insertion" program as outlined could be originated immediately upon the decision to do so, with the first steps being issuance of a "T" number and other normal procedures by the Air Force. Firing tests could commence very early in the program, starting with mock-ups being fired for ballistic evaluation.

During the time that these early steps are being taken and a true historical background is being established, the detailed plans for inadvertent revelation can be more completely formulated and then placed into operation at a time deemed advantageous.